



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,293	11/10/2003	Joshua C. Liu	370041-00005	5071

8840 7590 08/24/2004

ECKERT SEAMANS CHERIN & MELLOTT, LLC  
ALCOA TECHNICAL CENTER  
100 TECHNICAL DRIVE  
ALCOA CENTER, PA 15069-0001

EXAMINER

LIN, ING HOUR

ART UNIT PAPER NUMBER

1725

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/705,293	Applicant(s) LIU ET AL.	
	Examiner Ing-Hour Lin	Art Unit 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2003.  
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-50 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 10 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0818</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Frischknecht et al.

Frischknecht et al (col. 5, line 1+) teach the claimed roll, comprising: a cylindrical roll core 66 having cooling passages (grooves) 78 located proximate to the surface of the roll core and spaced and extended regularly or symmetrically about the entire central longitudinal axis of the roll core; one metal overlay (roll jacket) 68, and two outward axles (roll pin) 70.

3. Claims 16-22, 30-38 and 47-48 and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Perry et al.

Perry et al (col. 1, line 64+) teach the claimed roll, comprising: a cylindrical roll core and body (elongated arbor) 1; one metal overlay (annular copper-alloy sleeve) 7 having cooling passages (grooves) 25 for cooling the roll and spaced and extended regularly or symmetrically about the entire central longitudinal axis of the roll core; two outward axles including a non-drive end 16; and end caps (cover plates) 29, wherein the sleeve can have an additional metal overlay (hard facing layer) 31 of chrome-nickel-steel alloy on its outer periphery.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 8-9, 11-12 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frischknecht et al in view of Griffon et al.

Frischknecht et al fail to teach the use of at least one centrally located inlet and outlet passages and a plurality of radially extending passages.

However, Griffon et al (col. 3 lines 66+) teach the use of at least one centrally located inlet and outlet passages 30, 40 and a plurality of radially extending passages 50, 60 perpendicular to the at least one centrally located inlet and outlet passages 30, 40 in

Art Unit: 1725

the cooling roll for the purpose of accelerating the removing heat from continuous casting. It would have been obvious to one having ordinary skill in the art to provide Frischknecht et al the use of at least one centrally located inlet and outlet passages 30, 40 and a plurality of radially extending passages 50, 60 perpendicular to the at least one centrally located inlet and outlet passages 30, 40 as taught by Griffon et al in order to effectively remove heat from continuous casting through the cooling roll.

7. Claims 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frischknecht et al in view of Griffon et al and further in view of Hawes et al.

Friskhnecht et al in view of Griffon et al fail to teach the use of a plurality of radially extending passages each defines an acute angle to the at least one centrally located inlet and outlet passages. However, Hawes et al (col. 2 lines 47+) teach the use of a plurality of radially extending passages 3 each defines an acute angle to the at least one centrally located inlet and outlet passages 2 and closes the end of the passages with end caps 6 in the cooling roll for the purpose of accelerating the removing heat from continuous casting. It would have been obvious to one having ordinary skill in the art to provide Friskhnecht et al in view of Griffon et al the use of a plurality of radially extending passages each defines an acute angle to the at least one centrally located inlet and outlet passages wherein the end of the passages are closed with end caps as taught by Hawes et al in order to effectively remove heat from continuous casting through the cooling roll.

Art Unit: 1725

8. Claims 23-24, 26-27, 29, 39-40, 42-43 and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perry et al in view of Griffon et al.

Perry et al fail to teach the use of at least one centrally located inlet and outlet passages and a plurality of radially extending passages.

However, Griffon et al (col. 3 lines 66+) teach the use of at least one centrally located inlet and outlet passages 30, 40 and a plurality of radially extending passages 50, 60 perpendicular to the at least one centrally located inlet and outlet passages 30, 40 in the cooling roll for the purpose of accelerating the removing heat from continuous casting. It would have been obvious to one having ordinary skill in the art to provide Perry et al the use of at least one centrally located inlet and outlet passages 30, 40 and a plurality of radially extending passages 50, 60 perpendicular to the at least one centrally located inlet and outlet passages 30, 40 as taught by Griffon et al in order to effectively remove heat from continuous casting through the cooling roll.

9. Claims 25, 28, 41 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perry et al in view of Griffon et al and further in view of Hawes et al.

Perry et al in view of Griffon et al fail to teach the use of a plurality of radially extending passages each defines an acute angle to the at least one centrally located inlet and outlet passages. However, Griffon et al (col. 2 lines 47+) teach the use of a plurality of radially extending passages 3 each defines an acute angle to the at least one centrally located inlet and outlet passages 2 and closes the end of the passages with end caps 6 in the cooling roll for the purpose of accelerating the removing heat from continuous casting. It would have been obvious to one having ordinary skill in the art to

Art Unit: 1725

provide Perry et al in view of Griffon et al the use of a plurality of radially extending passages each defines an acute angle to the at least one centrally located inlet and outlet passages wherein the end of the passages are closed with end caps as taught by Hawes et al in order to effectively remove heat from continuous casting through the cooling roll.

10. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perry et al in view of Fukubayashi et al.

Perry et al fail to teach the use of multilayer for the additional metal overlayer.

However, Fukubayashi et al (col. 4 lines 3+) teach the use of multilayer coated on the cooling roll with steel-nickel-cobalt alloy for the purpose of enhancing the wear and thermal shock resistance for the cooling roll. It would have been obvious to one having ordinary skill in the art to provide Perry et al the use of multilayer coated on the cooling roll with steel-nickel-cobalt alloy as taught by Fukubayashi et al in order to effectively enhance the wear and thermal shock resistance for the cooling roll.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ing-Hour Lin whose telephone number is (571) 272-1180. The examiner can normally be reached on M-F (8:00-5:30) Second Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1725

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*I.H. Lin*

I.-H. Lin

8-18-04

**KILEY S. STONER**  
**PRIMARY EXAMINER**

*Kiley Stoner* 8/23/04